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# FOREST CONTROL

*by*

# CONTINUOUS INVENTORY

"Today I have grown taller than  
with the trees."

Milwaukee, Wis. February No. 47

## CFI ACCOMPLISHMENTS IN 1957

### CONSULTATION AND FLOW CHART SESSIONS

- 9 Industrial Groups
- 2 National Forest Cases
- 1 County Forest Case
- Also
- Machine Computing on 6 Cases

### STATISTICS REPRESENTING YEAR'S ACCOMPLISHMENTS

- Consultation and Flow Charts  
2,000,000 acres - 5,400 plots - 110,000 trees
- Machine Computation  
1,000,000 acres - 3,700 plots - 70,000 trees
- Field Work  
900,000 acres - 2,300 plots - 60,000 trees

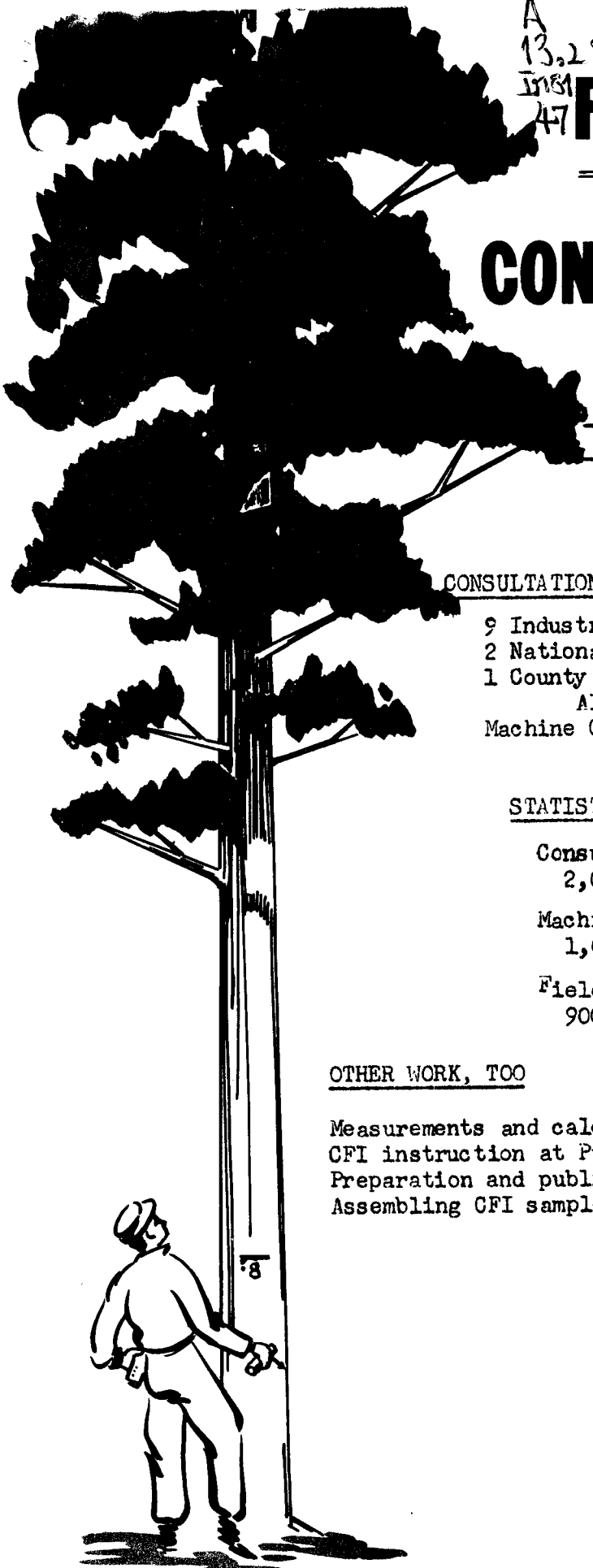
### OTHER WORK, TOO

- Measurements and calculations on basic technical studies.
- CFI instruction at Purdue University.
- Preparation and publication of monthly and occasional articles.
- Assembling CFI sample decks for distribution.

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GEORGE SEMMENS  
Region 9 - Milwaukee

*The Forester*



## STONES WOODS

We have written several times lately concerning the distribution of duplicate decks of the tree detail cards from Stones Woods. A dozen decks have been sent out now to all sections of the country and to Canada. The cost of these "show me" decks was only \$11.19 each. We will be interested to hear from those who are working with these decks. Let us know how you are making out. If you have any suggestions, we welcome them. If you have any questions, we will do our best to give you good answers.

### Compare - Predict

It is becoming common practice on CFI cases to have the individual tree cards interpreted and printed at the top of the card before returning to the field for a second measurement. By this method the previous measurement of such things as diameter, vigor and soundness on any one tree can easily be checked by the tallyman and compared with the current measurements on the same tree. When you have the opportunity to make this comparison, you will notice certain definite relationships that show up time and time again.

We have had the opportunity to make this comparison in Stones Woods. Here we had measurements, taken in two successive years, interpreted in printing at the top of the card. We discovered that we were able to make some comparisons between these two measurements that would enable us to predict certain things.

One of the most interesting of these was diameter growth. We knew the two previous diameter measurements, as well as the vigor and the amount of cull in the tree. We could then consider the species and glance at the general location of the tree in the stand, and all this gave us a pretty good indication of what the current diameter measurement of the tree should be. We found that with a little practice we became quite proficient guessers and that we could guess correctly about 75% of the time. The rest of the time we wouldn't be very far off, either. And all these measurements to the nearest 1/100 of an inch!

We learned to respect the consistency and order of Mother Nature, and when our estimate did not come near the measurement, we always found a cause for the difference in ourselves, in the tree, or in extraordinary factors.

### IBM SCHOOL, MARCH 17 - 21

The IBM accounting management school slated to begin St. Patrick's Day is "sold out". We have 25 people registered from all sections of the country. This is going to be a real interesting week, and we are sure that when we all get our heads together, we are going to come up with some new and constructive ideas and procedures.

## NEW TECHNIQUES

Something new, which we are doing now and are finding quite helpful, is the use of what we call a "tree status" column in the tree detail card. This is the column in which we can indicate tree changes when comparing two successive measurements. We are thinking here in terms of the following:

1. Cordwood trees which were present at both measurements (no change).
2. Sawlog trees which were present at both measurements (no change).
3. Ingrowth into cordwood trees.
4. Ingrowth into sawlog trees.
5. Mortality trees.
6. Trees cut.
7. Trees becoming culls.

We find it very convenient to have this single column to record change of various kinds. Change, more than anything else, is a strong part of any CFI inventory. We also find it revealing to use this as one of our sorts when preparing a check listing just prior to the machine computations. Many types of errors are easily turned up and more readily noticed when we sort on related data and list for visual comparison. Here we are using the machines to their fullest advantage.

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### NEPCO CALCULATES SECOND MEASUREMENT

Twenty-five thousand tree cards went through the mill at the Service Bureau Corporation in Milwaukee, Wisconsin recently as the Nekoosa-Edwards Paper Company of Port Edwards, Wisconsin calculated a three-year growth record. NEPCO foresters, Bruno Berklund and Ray Carlson, were here to prepare the "spec" sheets and help direct the project. Of the 25,000 trees involved on 829 plots:

15,000 trees were present both measurements
5,500 trees were from new plots (acquired lands)
3,000 trees were ingrowth
800 trees were cut and used
700 trees were lost through mortality
<u>25,000</u> Total

Attached is a report on the "Test of the Feasibility of the Dictaphone 'Dictet' for Recording Tree and Plot Data in the Field". This test was conducted at Purdue University on some local forest plots. It was part of the work performed by a group of graduate students in connection with their studies in "Continuous Forest Control". It is encouraging to see this institution training men in machine methods and inventory techniques so directly related to the CFI system. Industry will welcome men with training and experience such as this.

Attachment

GEORGE SEMMENS

## USING TOMORROW'S METHODS TODAY

### A TEST OF THE FEASIBILITY OF THE DICTAPHONE "DICTET" FOR RECORDING TREE AND PLOT DATA IN THE FIELD

An attempt was made in two brief tests, to determine the relative advantages or disadvantages of the "Dictet", as opposed to "mark sensing" for recording tree and plot data in C.F.I. and other projects, prior to card punching. This test is not conclusive but only exploratory.

#### TEST A

Measurements read aloud in the office onto tape with the "Dictet" from a listing of 10 plots containing 106 trees. One man also tallied by mark-sensing. There were 21 columns of information in each tree card.

#### Results with the "Dictet" in the office

Very few corrections had to be made on the tape while recording. Those which were made presented no difficulty in correcting. Upon key punching and verification from the tape, 3 cards had to be repunched due to errors by the key punch girl.

#### Results with mark-sensing in the office

When the mark-sensed cards were machine punched, 5 cards were found to be in error; in one card 3 columns of information were skipped by the marker; in 4 cards faulty information was mark-sensed onto the cards.

#### Comment:

Test "A" served to remove many of the kinks from the operation of the "Dictet". The mark-sense errors can probably be traced to the speed with which the information was read from the listing. The data could not be satisfactorily mark-sensed at this rate of speed.

The key punch girl required one hour to punch and one hour to verify the 106 card records. This is an excessive amount of time and due probably to inexperience with this new medium of source document.

#### TEST B

Measurements taken in the field for three plots containing 45 trees. One man dictated onto the "Dictet" tape and another mark-sensed the same information.

#### Results with the "Dictet" in the field

Very few corrections necessary on the tape in the field. No cards had to be repunched by the key punch girl. Key punching and verification satisfactory.

## Test B (continued)

### Results with the mark-sensing in the field

In the field one card was double-punched due to stray pencil mark. Apparently the mark-senser had less difficulty keeping up in the field where the work done on each tree was slower than reading the record from a listing in the office.

### Comment:

The two methods are comparable from an accuracy standpoint. The key punch girl required 10 minutes to punch and 10 minutes to verify the 45 cards. This rate of one hour for 270 cards to punch 21 columns of information is probably a good estimate for future operation speeds. An equal time will be needed for verification.

### General Conclusions

1. The "Dictet" was found to be entirely feasible for use in C.F.I. or other projects to record field data. No mechanical or operational difficulties were encountered.
2. The speed of dictation need not be adjusted to a separate tallyman's rate of recording, and so it is done at a faster rate of speed.
3. When using the tape recorder there is less flexibility in the order in which information can be taken. A set pattern must be adhered to in the field recording.
4. The tape recorder has greater adaptability for taking field data under adverse weather conditions than other presently used methods.
5. The "Dictet" could easily be used to gather field information by a one-man crew.
6. If a two-man crew is needed, as in rough, wild country, then the tallyman can measure heights and determine grades for the cruiser who uses the "Dictet".
7. When comparing the "Dictet" and mark-sensing, it must not be forgotten that machine work and checking still remain to be done on the mark-sense cards. They must be mark-sense punched.

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